

WHAT IS CLAIMED IS:

1. An audio-signal detecting device to be disposed in earmuffs to attenuate or mute high-decibel audio signals inputted into the earmuffs, comprising:

a receiving unit for receiving external audio signals;

5 a first audio-signal amplifying unit having its input end coupled with the output end of said receiving unit for amplifying the output signals of said receiving unit;

a second audio-signal amplifying unit having its input end coupled with the output end of said first audio-signal amplifying unit for amplifying the output
10 signals of said first audio-signal amplifying unit;

a peak-detecting and inverting unit having its input end coupled with the output end of the second audio-signal amplifying unit for detecting the signal peaks and the inverting output thereof;

a first amplifying unit having its input end coupled with the output end of
15 said first audio-signal amplifying unit and of said peak-detecting and inverting unit for receiving the output signals of said peak-detecting and inverting unit and comparing them with the signals inputted to said selfsame amplifying unit in order to attenuate over-high audio signals;

a peak-detecting unit having its input end coupled with the output end of
20 said second audio-signal amplifying unit for detecting the output audio-signal peaks from said second audio-signal amplifying unit;

a first switch having its input end coupled with the output end of said peak-detecting unit for receiving the signal voltage greater than a predetermined peak value detected by said peak-detecting unit;

a delay unit having its input end coupled with the output end of said first switch for receiving the output signal of said first switch to generate a charge effect;

5 a second amplifying unit having its input end coupled with both the output end of said first switch and the input end of said delay unit for enlarging the output voltage gradually according to the charge effect of said delay unit; and

a third switch having its input end coupled with the output end of said delay unit, being designed to ground the output end of said second amplifying unit to prohibit signal output thereof and thereby attenuate audio signals at over-high
10 decibel level, which is supposedly to get recovered following to the fade-in of the output signals from said second amplifying unit due to the charge effect caused by said delay unit.

2. The audio-signal detecting device according to claim 1, in which said receiving unit is a microphone.

15 3. The audio-signal detecting device according to claim 1, in which said first amplifying unit and said second amplifying unit are composed of a transistor.

4. The audio-signal detecting device according to claim 1, in which said first switch and said third switch are composed of an analog switch.

5. The audio-signal detecting device according to claim 1, in which said delay unit
20 is composed of a resistor and a capacitor.

6. The audio-signal detecting device according to claim 1, in which said delay unit and said third switch are coupled with said second switch composed of an analog switch.

7. The audio-signal detecting device according to claim 1, in which the output end

of said third switch and of said second amplifying unit are coupled with an adjusting unit.

8. The audio-signal detecting device according to claim 7, in which said adjusting unit is a variable resistor.

5 9. The audio-signal detecting device according to claim 1, in which the output end of said adjusting unit is coupled with a third audio-signal amplifying unit.

10. The audio-signal detecting device according to claim 9, in which the output end of said third audio-signal amplifying unit is coupled with an output unit.

11. The audio-signal detecting device according to claim 10, in which said output
10 unit is either a buzzer or a speaker.

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